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THE
ONTARIO WATER RESOURCES
COMMISSION

WATER POLLUTION SURVEY

OF THE

TOWNSHIP OF SCHREIBER

DISTRICT OF THUNDER BAY

1964

TOWNSHIP OF SCHREIBER
(DISTRICT OF THUNDER BAY)
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R E P O R T

on

WATER POLLUTION SURVEY

of the

TOWNSHIP OF SCHREIBER

District of Thunder Bay

September 25, 1964

Division of Sanitary Engineering

REPORT

ONTARIO WATER RESOURCES COMMISSION

INTRODUCTION

A water pollution survey was conducted in the Township of Schreiber on September 25, 1964. The survey included specifically the built-up area of the township referred to as the Community of Schreiber.

ACKNOWLEDGEMENTS

Information pertinent to the survey was provided by municipal, and Canadian Pacific Railway Company Authorities including:

Mr.C.R. Pike, P.Eng., Canadian Pacific Railway.
Mr.F.V. Harness, Township Reeve.
Mr.J. McGrath, Township Councillor.
Mr.R.C. Skinner, Township Clerk-Treasurer.

Mr.F. Wright and Mr.F. Davison, Public Health Inspectors, Port Arthur and District Health Unit, assisted in the survey.

GENERAL

The Township of Schreiber with a 1963 assessed population of 2,177 (1964 Municipal Directory) is located on the Canadian Pacific Railway main line, approximately 125 miles east of the lakehead cities of Port Arthur and Fort William. The built-up area of Schreiber is approximately one mile inland from the north shore of Lake Superior.

General drainage for the town is provided by the Schreiber Creek watercourse which flows in a southerly direction from Cooks Lake into Lake Superior.

The township does not provide a municipal system for the treatment and disposal of sanitary sewage and domestic or commercial wastes.

The Canadian Pacific Railway Company does, however, service limited sections of the town, and company buildings, with a partial sewerage system consisting of collector sanitary sewers, and two sedimentation tanks. Other than this, cesspools, privies, and a few septic tank systems are utilized for sewage disposal.

The installation of cesspools as a means for the treatment and disposal of sanitary sewage has been an unapproved practice in this municipality. It was reported that some private properties contain several such units, and that in some instances, due to the lack of space, cesspools have been located under buildings. It was also learned that common procedure has been, to excavate a new cesspool when the existing one ceases to function.

Concern has been expressed by public health authorities as to possible health hazards involved by the continued use of present and future cesspool installations.

CANADIAN PACIFIC RAILWAY SEWAGE SYSTEMS

The railway has installed and operated two separate sewage treatment units. One to the north of the railroad and the other to the south.

The north system provides collector sewer services to one public school, two churches, the YMCA building (70 rooms), six houses, and to the C.P.R. stores, freight sheds and car shop.

Treatment for sewage collected in the north system is provided in a sedimentation tank, with effluent discharge into Schreiber Creek. Information concerning the dimensions or working capacities of the tanks was not available.

The south system services approximately eight double and one single houses, two schools, and the C.P.R. station building. Treatment for sewage collected in this system is also provided in a sedimentation tank with effluent discharge into Schreiber Creek.

SURFACE-WATER DRAINS

Storm and surface water is conveyed in open surface ditches. At the time of inspection there was no discharge from any such drains located.

WATER QUALITY ANALYSES

Water samples were collected from the effluent of each of the sedimentation tanks and from representative points in Schreiber Creek, the receiving watercourse.

The results of the sanitary chemical analyses and bacteriological examination of samples collected are listed on Table 1.

The locations of sampling points are designated on the accompanying map by watercourse mileage distances from the mouth of Schreiber Creek at Lake Superior.

WATER QUALITY OBJECTIVES

The Ontario Water Resources Commission water quality objectives for all surface waters are as follows:

5-Day BOD (Biochemical Oxygen Demand)

- not greater than 4 parts per million (ppm)

Coliform Count - M.P.N. (most probable number)

- not greater than 2,400 per 100 cubic centimeters (c.c.)

Anionic Detergent as ABS

The presence of anionic detergent in a water sample indicates

pollution from domestic sources.

The water quality objectives for effluents from sewage treatment plants are as follows:

5-Day BOD (Biochemical Oxygen Demand)

- not greater than 15 parts per million (ppm)

Suspended Solids

- not greater than 15 parts per million (ppm)

Coliform Count - M.P.N. (most probable number)

- not greater than 2,400 per 100 cubic centimeters (c.c.)

SIGNIFICANCE OF LABORATORY ANALYSES

The laboratory analyses of the effluents from the sedimentation tanks indicate that the quality does not meet the Ontario Water Resources Commission objectives. However these results are normal for this type of treatment.

The laboratory analyses of samples collected from Schreiber Creek indicate that the bacteriological water quality is being impaired to some degree by drainage and discharges to the creek from the Schreiber built-up areas.

CONCLUSIONS

At the time of this survey, the sewage treatment being provided by the C.P.R. systems was normal for this type of facilities.

These systems however, service only a very small number of people and a relatively small area of the community.

The practice of utilizing cesspools for sewage treatment and disposal is not satisfactory and could create public health hazards. Property owners currently utilizing cesspools should be required to discontinue

this method of treatment.

Where private treatment facilities are required an approved septic tank system should be installed and operated under the supervision of the Health Unit.

It is known that many properties, particularly in the business areas, do not have space available for the installation of adequate field tile disposal beds, consequently the installation of satisfactory septic tank systems is not possible. Therefore in order to provide treatment and disposal for wastes produced on these properties the installation of sanitary sewers with an adequate method of sewage treatment is deemed necessary.

SUMMARY

A water pollution survey was conducted in the built-up portion of the Township of Schreiber on September 25, 1964.

The Canadian Pacific Railway owns and operates two sewage treatment systems which service only a limited number of persons and properties. Each system consists of collector sewers and a sedimentation tank. At the time of inspection treatment being provided by these units was normal for this type of system.

Individual cesspools are utilized generally for the treatment and disposal of sanitary sewage. Such units are unapproved and do create potential health hazards. It was learned that in some instances in the business area several cesspools have been installed on single properties, and that some cesspools are known to be installed under buildings.

The installation of septic tank systems to replace the cesspool installations in these instances is not practical, and in some cases impossible.

The installation of sanitary sewers with an adequate method for sewage treatment is therefore considered necessary, especially in the business sections and the surrounding residential areas.

RECOMMENDATIONS

1. The Township of Schreiber should take measures to ensure that all private sewage disposal systems are approved by, and installed and operated under the supervision of the Port Arthur and District Health Unit.

2. The municipality should consolidate the planning for a sewage works programme, and proceed with the installation of the necessary sanitary sewers and construction of a method of sewage treatment. The first phase of such a programme could provide sewerage service for the business sections and the surrounding residential areas.

All of which is respectfully submitted,

District Engineer

C.E. McIntyre

Approved by

K.H. Sharpe, Director.

T A B L E I

TOWNSHIP OF SCHREIBER - WATER POLLUTION SURVEY

<u>Sample Number</u>	<u>Location of Sampling Point</u>	<u>5-Day BOD (ppm)</u>	<u>Solids (ppm)</u>			<u>Anionic Detergents as ABS (ppm)</u>	<u>Coliform Count per 100 c.c. M.P.N.</u>
			<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>		
S 1.70	Schreiber Creek upstream from Town at Highway No. 17	1.4	50	1	49	0.0	230
S 1.20 T	Effluent from North Sedimentation Tank	18.0	198	10	188	0.2	4,600,000
S 1.15	Schreiber Creek downstream from discharge from North Tank	1.5	84	2	82	0.0	150,000
S 1.05 T	Effluent from South Sedimentation Tank	51.0	284	54	230	4.4	11,000,000
S 1.00	Schreiber Creek downstream from Town	1.6	140	2	138	0.1	230,000

